Program Executive Office Command, Control, Communications, Computers and Intelligence (PEO C4I)

Battlespace Awareness and Information Operations Program Office (PMW 120)

27 October 2015
Susie Hartzog
Deputy Program Manager
619-524-7820
susie.hartzog@navy.mil

PMW 120 Provides Information Dominance Capabilities

Focus

Meeting our commitment to the Fleet through Acquisition Professionalism and Proactive Sustainment of our systems from cradle to grave

Mission

Deliver intelligence, meteorological, oceanographic and information operations data, products and services that provide Information Dominance for naval warfighters

PMW 120 delivers…

- Net-ready intelligence, meteorological, oceanographic, and information operations products and services
- The ability to seize and control the Information domain high ground
- A decisive competitive advantage across the range of Navy missions

PMW 120 is the only program office that exclusively fields Information Dominance capabilities

PMW 120 Portfolio

Intelligence, Surveillance and Reconnaissance (ISR)

- DCGS-N Increment 1 (ACAT IAC)
- DCGS-N Increment 2 (Pre-MAIS)
- AIS (ACAT IVT)
- ICOP (ACAT III)
- MDA Fielded (Project)
- MIBS (CTT/JTT) (Project)

Information Operations (IO)

- SSEE Increment E (ACAT III)
- SSEE Increment F (ACAT II, Projected)
- SSEE Modifications (ACAT III)
- Spectral (Project)
- CCOP (3 AAPs, Project)

Meteorology and Oceanography (METOC)

- NITES-Next (ACAT III)
- METMF(R) NEXGEN (ACAT IVT)
- LBS UUV (ACAT IVM)
- TESS/NITES (ACAT IVT)
- RSCD (Project)
- HWDDC (AAP)
- FMC (Project)
- METOC Space (Project)
- TOC/USW (Project)

Enhancing battlespace and global maritime domain awareness to support warfighting forces and other users of national interest

About PMW 120

Government Workforce - 66

- Military: 14
- PEO Civilians: 25
- SPAWAR embedded employees: 27

FY16 Total Obligation Authority - $395.003M

- Research & Development: $84.683M
- Other Procurement: $199.739M
- Operations & Maintenance: $78.915M
- Shipbuilding and Conversion: $31.666M

Programs and Projects - 26 (active)

- 1 ACAT IAC
- 1 Pre-MAIS
- 4 ACAT III
- 4 ACAT IV
- 4 AAP
- 4 Pre-Acq
- 8 Projects

Acquisition Professionalism

- Get the basics right: requirements, engineering, cost estimating, contracts, and communication
- Know how every dollar is spent
- Think broadly, it's never just about one program

Proactive Sustainment

- Systems are operational – prove it
- Systems are secure – prove it
- Sailors can operate the systems – lead them

Cybersecurity

- Essential in everything we do
- Baked in, not bolted on

Meteorology and Oceanography Capabilities

Material Solution Analysis	A	Technology Maturation & Risk Reduction	B	Engineering & Manufacturing Development	C	Production & Deployment	Operations & Support
Pre-Systems Acquisition			Systems Acquisition				Sustainment

Future METOC Capabilities (FMC)

- Operationalizes software algorithms that are designed to assess and predict the complex physical processes of the ocean and atmosphere and improve the effectiveness of warfighter decisions

Remote Sensing Capability Development (RSCD)

- Provides enhanced remote sensing capability to the Fleet

Tactical Oceanography Capabilities for Undersea Warfare (TOC/USW)

- Research efforts support the Navy's ASW and MIW activities
- Technology transitions into ASW and MIW Tactical Decision Aids and into NAVO and OCEANOPSCOM operations

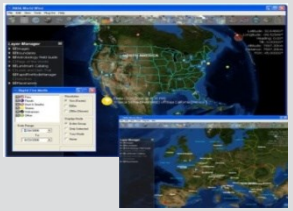
METOC Space Systems (METOC Space)

- Exploits environmental satellite sensor data
- Develops advanced data assimilation techniques and applications

Enhancing Navy Oceanographic/ Atmospheric modeling capability

Naval Integrated Tactical Environmental System-Next Generation (NITES-Next)

- Software-centric, Information Technology (IT) Streamlining program, provides capabilities to process, store, and analyze METOC data and products
- Assesses the impact of present and forecasted METOC conditions



Enhanced geospatial visualization and manipulation capabilities

Hazardous Weather Detection and Display Capability (HWDDC)

- HWDDC extracts data from the SPS-48 radar to generate weather situational awareness products.

Display Weather Returns

Marine Corps Meteorological Mobile Facility (Replacement) Next Generation (METMF(R) NEXGEN)

- Provides the Marine Corps with a persistent capability to characterize the current and future battlespace environment to support mission planning and execution

Mobile, fully integrated, FORCEnet complaint USMC tactical support system

Littoral Battlespace Sensing – Unmanned Undersea Vehicle (LBS UUV)

- **Gliders** provide long endurance sensing of ocean thermal and optical data critical to weapon and sensor performance planning and execution
- **Autonomous Undersea Vehicles** collect high resolution bathymetric and bottom imagery for use in weapon and sensor performance planning and execution and safety of navigation

Persistent autonomous oceanographic data collection

Tactical Environmental Support System/Naval Integrated Tactical Environmental System (TESS/NITES)

- Provides Operational and Tactical METOC support capabilities to USN/USMC units afloat/ashore
- Enables critical battlespace awareness and characterization of the environment

Advanced Refractive Effects Prediction System (AREPS)

- Enhances radar modeling to enable improved situational awareness of radar detection capability, as effected by METOC conditions

Information Operations Capabilities

Material Solution Analysis	A	Technology Maturation & Risk Reduction	B	Engineering & Manufacturing Development	C	Production & Deployment	Operations & Support
Pre-Systems Acquisition				Systems Acquisition			Sustainment

Spectral

- Exploitation equipment that is scalable to platform, reconfigurable to mission, modular (plug and play), and dynamically reprogrammable to support new threats/capabilities.
- The Next Generation system will be integrated with Shipboard Combat Systems and it will improve automation, operability, intuitiveness in tasking, collection, processing, exploitation, and dissemination

Ship's Signal Exploitation Equipment (SSEE) Modifications

- Consists of Graywing and Paragon frequency capability enhancements to address objective requirements set forth in SSEE Inc F CPD and PACFLT Urgent Operational Needs

SSEE Mods Maintainer performing system check

Ship's Signal Exploitation Equipment (SSEE) Increment F

- Provides a standardized IO weapon system across multiple maritime platforms based upon a common core capability

Sailor providing routine maintenance to the AS-4623 IO Antenna

Ship's Signal Exploitation Equipment (SSEE) Increment E

- Highly sensitive automated electronic support measure (ESM) system that provides automatic signal acquisition, direction finding, and target geo-location capability for multiple class platforms

Sailors learning the SSEE Inc E ESM system

Cryptological Carry-on Program (CCOP)

- Exploitation equipment capable of processing various Signals of Interest, providing geo-location data, and ingesting off-board intelligence data
- Low-cost solutions that address dynamic advancements in commercial and foreign military telecommunications systems

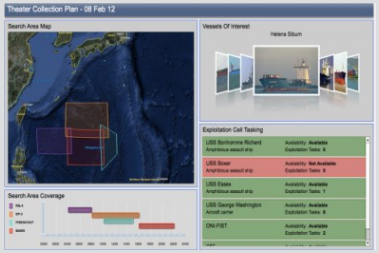
Intelligence, Surveillance, and Reconnaissance Capabilities

Material Solution Analysis	A	Technology Development	B	Engineering and Manufacturing Development	C	Production & Deployment	Operations & Support
Pre-Systems Acquisition			Systems Acquisition				Sustainment

Distributed Common Ground System – Navy (DCGS-N) Increment 2

- Improving target quality intelligence by delivering advanced analytic capabilities and automated workflows both afloat and at ashore enterprise nodes

Identifying Maritime Patterns of Life (Big Data)



Providing Automated Workflows and Analytics

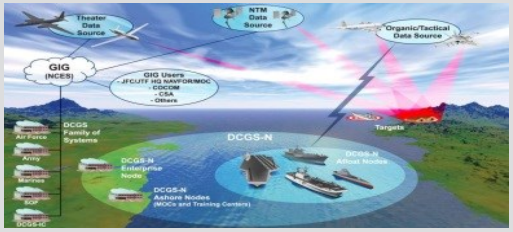
Intelligence Carry On Program (ICOP)

- Responds to multiple Fleet requirements (C5F/C3F UONs)
- Delivers a suite of Multi-INT, analytical capabilities, and extends the ISR Enterprise/ DCGS FoS to Unit Level Platforms
- Supports FMV receive, process, exploit, and disseminate capabilities

Robust portable Intel system

Distributed Common Ground System – Navy (DCGS-N) Increment 1

- **Block 1** provides enhanced precision target geo-positioning, point mensuration, and imagery dissemination
- **Block 2** builds on Block 1 and provides enhanced IMINT, Collection Management tools, and additional storage in support of TCPED



Enhancing warfighter's Common Operational Picture

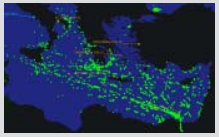
Joint Tactical Terminal – Maritime (JTT-M)

- Provides Navy surface platforms with the capability to receive, exchange, and process Over-the-Air, Near-Real-time, time-critical intelligence and targeting information carried over the Integrated Broadcast Service (IBS)
- Filters, translates, and distributes critical tactical information to multiple shipboard Tactical Data Processors (TDPs)

JTT-SR is integrated into AN/USQ-151

Automatic Identification System (AIS)

- Collects commercial vessel AIS data to improve situational awareness and safety of navigation
- Supports Safety at Sea / Navigation, Maritime Interdiction Operations (MIO), Overseas Contingency Operations (OCO), and Homeland Defense mission areas



Improved Vessel Tracking

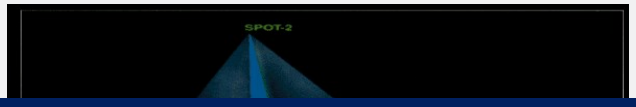
Maritime Domain Awareness (MDA)/Dynamic Enterprise Integration Platform (DEIP)

- Provides enhanced vessel tracking, improved fusion of vessel, people, company, cargo data and anomaly detection and alerting

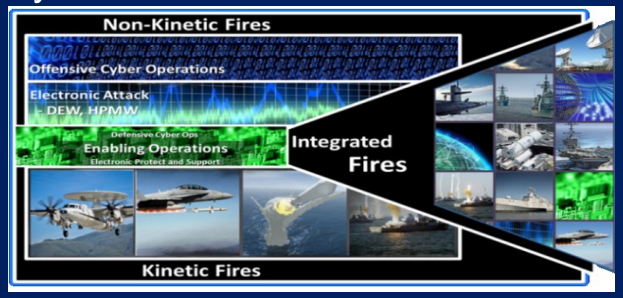
Vessel Tracking and Anomaly Detection

Future Opportunities
Integrated Information Dominance

DCGS-N Increment 2
- Improved SA through High Side Multi-INT Fusion and NTM
- Tactical Activity Based Intelligence capabilities and Object Based Production (OBP)
- Provide SW-centric cloud-enab
- Automated fusion, detection, a
- Leverages TCPED architecture

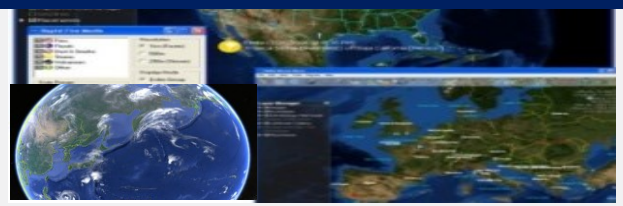


Integrated Fires, a part of Electromagnetic Maneuver Warfare (EMW)
- Integrate kinetic and non-kinetic fires
  - High Side Fusion (HSF)
  - Combat Systems Integration (CSI)
  - Battle Management Aids (BMA)
- Fully integrating National Technical Means (NTM), organic sensors and weapon systems information



Distributed Operations/SPE
- Build on SSEE Inc F capabilitie
- Provide increased frequency ra
- Address new Signals Of Interes
- Provide distributed operations/
- Define a smaller hardware foot

METOC (NITES-NEXT)
- Tighter integration between ME with operational and intelligence content to improve effectiveness of warfighter decisions and provide more predictive capabilities
- Undersea Warfare battlespace characterization aids
- Exploits environmental satellite sensor data
- Develops advanced data assimilation techniques and applications



Where Industry Can Help
Collaboration Opportunities

- **Enhanced Data Discovery and Access**
  - Real Time Fusion of Historical and Real Time Sensor Data with Pattern Recognition
  - Storing, Accessing and Archiving Large Data Sets
  - Analysis of Distributed Data Across Multiple Clouds
  - Ability to rapidly deploy new SOI
- **Remoting and Distributed Operations**
  - Optimize Spectrum Utilization
  - Electromagnetic Interference (EMI) Mitigation
  - High-reliability, wideband high power amplifier (HPA)
  - Countering Emerging Signals
  - Modeling and Simulation
  - Multifunction Antennas
- **Advanced Data Display and Visualization**
  - Automated Target Recognition From FMV
  - FMV Annotation and Search
- **Workflow Analysis (within IO and between IO and ISR and METOC)**
- **Electromagnetic Spectrum Management and Exploitation**
  - Intelligence collection
  - IO Warfare
- **Advanced Analytics and Tools**
  - All Source Predictive Analysis and Pattern Recognition
  - Activity Based Intelligence tools that utilize multi-INT sources and environmental analytics

Industry Engagement Opportunities

Competitive Opportunities		
Program	RFI/RFP Release Date	Scope
DCGS-N Increment 2	RFP (Q3FY16 est.)	Design, Development, Integration, Testing, Documentation
Spectral	RFI (FY16), RFP (FY17)	Design, Development, Integration
NITES-Next FCR-3	RFP (4QFY16 est.)	Design, Development, Testing

R&D Opportunities

- Rapid Innovation Fund (RIF)
  - Accelerate fielding of innovative technologies into military systems
  - Preference to small business, merit-based, two step “application” process
- Office of Naval Research Science and Technology (ONR S&T) Efforts
  - Fosters transition from S&T to higher levels of research, development, test, and evaluation
  - Capability gaps assessed and communicated annually to Industry, offering Industry the opportunity to engage and propose their technologies for a specific need/gap
- ISR (PMO) Military Intelligence Program (MIP) investments
  - Tactical SIGINT Technologies (TST): targets SIGINT shortfalls
  - Maritime Cryptologic Capability (MCC): addresses urgent need for emergent technology
- Small Business Innovative Research (SBIR)/ Small Business Technology Transfer (STTR) Program
  - SBIR: transitions new technologies into programs of record
  - STTR: small businesses partner with not-for profit research institutions (such as universities) to move research to the marketplace